



UNIVERSITY
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Study of Outcomes of Intensive Care

by

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Abstract

Many studies show long-term outcome following critical illness involves reduced physical function, increased psychological symptoms, neuropsychological impairment and reduced quality of life compared with population norms. It is assumed these are a direct consequence of critical illness and critical care therapies.

The STudy of Outcomes of Intensive Care (STOIC) was designed to compare the long-term functional, neuropsychological and psychosocial recovery of intensive care unit (ICU) survivors (ICU patients) with non-intensive care, acute-care hospitalised controls. Secondary aims include identifying variables which predict outcome (for ICU patients only) at two years after ICU discharge.

Seventy-one survivors from two mixed medical-surgical ICU populations and seventy-two age- sex- matched non-ICU acute-care hospitalised controls, (selected from same hospital populations) were consecutively recruited at unit discharge. A broad test-battery incorporating standardised objective and subjective tests to measure functional, psychosocial, neuropsychological impairment together with patient self-report was used at six timepoints, across a two year period. Face-to-face, semi-structured interviews were conducted.

Data was analysed using mixed model regression. Thematic analysis drew subject themes from patient narratives. Pearson correlations were calculated to inform selection of variables for outcome prediction.

Preadmission scores reflect a state of chronic disability for both ICU patients and controls. Neither group reach complete functional independence during the study period. High levels of functional impairment are seen among controls, ranging between 56 - 85%. At two years following discharge mean functional test scores for both groups remain below preadmission levels.

Comparatively, ICU patients display lower levels of community integration throughout the study period.

There were no cases of Post-Traumatic Stress Disorder identified with both groups displaying low levels of anxiety and depression. Neuropsychologically, neither group achieved scores in the normative average range. A higher proportion of the ICU group were cognitively impaired at each time point. At two years following discharge, 21% of ICU patients and 16% of controls remain impaired in verbal, working memory. Several baseline variables were strongly correlated with impairment and mortality two years after unit discharge. Significant predictors include years of education, Mini Mental State Examination, Community Integration Questionnaire, Functional Independence Measure, and Charlson Age Comorbidity Index.

This study unexpectedly uncovers high levels of impairment for a non-ICU acute-care hospital population which have not previously been acknowledged whilst also demonstrating a correlation of high impairment among ICU patients. Baseline variables are capable of predicting clinically relevant outcomes two years after discharge. Clinicians, patients and carers are benefitted with the research of this paper, to be further informed of the possible after-effects associated with treatment for critical illness.

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